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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/795,952	03/08/2004	Takashi Komura	TOW-066	1413
959	7590	05/17/2006		
LAHIVE & COCKFIELD 28 STATE STREET BOSTON, MA 02109				
EXAMINER CHUO, TONY SHENG HSIANG				
ART UNIT			PAPER NUMBER	
1746				

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/795,952	KOMURA ET AL.	
	Examiner	Art Unit	
	Tony Chuo	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 10 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/8/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-9 and 12-13, drawn to a fuel cell, classified in class 429, subclass 34.
 - II. Claims 10-11, drawn to a method of making a fuel cell, classified in class 429, subclass 13.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the process as claimed can be used to make another and materially different product. The fuel cell made does not need include a resin insulator.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

During a telephone conversation with Ms. Lynn Hall on 5/11/06, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-9 and 12-13. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-11 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
3. The disclosure is objected to because of the following informalities: on page 18, lines 18 and 20, the phrase "cathode electrolyte layer" should be changed to "cathode catalyst layer". Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1, 2, 5, and 7 are rejected under 35 U.S.C. 102(a) as being anticipated by Maeda et al (JP 2003-197225). Regarding claim 1, the Maeda reference teaches a fuel cell comprising: a porous insulating film "120"; a plurality of power generation units "110" including a pair of adjacent power generation units "110"; where each power generation units include a first electrode, or anode electrode "111", facing said porous insulating

film "120", a second electrode, or cathode electrode "112", and an electrolyte "115" interposed between first electrode and second electrode; a first electrically conductive film "211" electrically connected to first electrode of one of said adjacent power generation units, and extending in parallel to said first electrode; and a second electrically conductive film "212" electrically connected to said second electrode of the other of said adjacent power generation units, and extending in parallel to said second electrode, wherein first electrically conductive film or second electrically conductive film has an expansion "220" between said adjacent power generation units for connecting said first electrically conductive film and said second electrically conductive film (See Drawing 4c). Regarding claim 2, it also teaches first electrically conductive film "211" is arranged in a substantially same plane with a gas diffusion layer of said first electrode "111", and second electrically conductive film "212" is arranged in a substantially same plane with a gas diffusion layer of said second electrode "112" (See Drawing 4c). Regarding claim 5, it also teaches a film "120" having windows "110" is laminated on said porous insulating film "120" such that said first or second electrodes of said power generation units are disposed in said windows "120" (See Drawing 4a). Regarding claim 7, it also teaches power generation units "110" each including first and second electrodes "111" & "112" and an electrolyte "115" interposed between said first and second electrodes where first electrode includes a first electrically conductive gas diffusion layer and second electrode includes a second electrically conductive gas diffusion layer; power generation units "110" including a first power generation unit and a second power generation unit adjacent to said first power generation unit, wherein first electrically conductive gas diffusion layer of first electrode "111" of said first power

generation unit has a first end protruding toward said second power generation unit; said second electrically conductive gas diffusion layer of said second electrode "112" of said second power generation unit has a second end protruding toward said first power generation unit; and said first end and said second end are electrically connected with each other by an electrically conductive member "220" extending through at least said electrolyte (See Drawing 4c). Although the drawing does not show the gas diffusion layers, it is well known in the art that the anode and cathode electrodes comprise a electrically conductive gas diffusion layer and a catalyst layer.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al (JP 2003-197225) in view of Winsel et al (US 3770509). The Maeda reference is applied to claims 1, 2, 5, and 7 for reason stated above. However, the reference does not expressly teach a first or second electrically conductive film that is made of a resin and an electrically conductive material. The Winsel reference does teach electrically connecting two gas diffusion layers with an electrically conductive resin comprising a plastic base material and a metal or graphite power (See column 3, line 63 to column 4, line 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Maeda fuel cell to

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include either a first or second electrically conductive film that is made of an electrically conductive resin in order to utilize a material that has high adhesive strength, electrical conductivity, and plastic flow.

8. Claims 6, 9, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al (JP 2003-197225) in view of Nishiumi et al (US 2002/0187382). The Maeda reference is applied to claims 1, 2, 5, and 7 for reason stated above. However, the reference does not expressly teach a reactant gas supply passage and a reactant gas discharge passage that extend through an end of the fuel cell; first and second electrically insulating separators for sandwiching the MEA unit; a fuel gas flow field facing the power generation units on first electrically insulating separator and an oxygen containing gas flow field facing the power generation unit on second electrically insulating separator; a casing containing the fuel cells; a plurality of guide groove formed on the separators on the surface opposite to a surface facing the power generation units for supplying a coolant along the separator; a coolant passage connected to the guide grooves of each fuel cell; and a seal member for separating the reactant gas supply passage and reactant gas discharge passage from coolant passage. The Nishiumi reference does teach a reactant gas supply passage "228" and a reactant gas discharge passage "229" that extend through an end of the fuel cell; first and second electrically insulating separators "218" for sandwiching the MEA unit; a fuel gas flow field "227a" facing the power generation units on first electrically insulating separator and an oxygen containing gas flow field "227b" facing the power generation unit on second electrically insulating separator; a casing "122" containing the fuel cells; a plurality of guide groove "226" formed on the separators on the surface opposite to a

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surface facing the power generation units for supplying a coolant along the separator; a coolant passage connected to the guide grooves of each fuel cell; and a seal member for separating the reactant gas supply passage and reactant gas discharge passage from coolant passage (See Figures 1, 4, and 5, paragraphs [0027],[0048]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Maeda fuel cell to include a reactant gas supply passage and a reactant gas discharge passage that extend through an end of the fuel cell; first and second electrically insulating separators for sandwiching the MEA unit; a fuel gas flow field facing the power generation units on first electrically insulating separator and an oxygen containing gas flow field facing the power generation unit on second electrically insulating separator; a casing containing the fuel cells; a plurality of guide groove formed on the separators on the surface opposite to a surface facing the power generation units for supplying a coolant along the separator; a coolant passage connected to the guide grooves of each fuel cell; and a seal member for separating the reactant gas supply passage and reactant gas discharge passage from coolant passage in order to supply and discharge the unit cells with reactant gases and coolant in a compact structure protected by a case.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al (JP 2003-197225) in view of Narayanan et al (US 6680139). The Maeda reference is applied to claims 1, 2, 5, and 7 for reason stated above. In addition, the Maeda reference also teaches a electrically conductive rivet member "180" (See Drawing 2c). However, the reference does not expressly teach first and second ends that have overlapping portions and at least the electrolyte is interposed between the overlapping

portions where the overlapping portions are connected by an electrically conductive member. The Narayanan reference does teach first and second electrode ends "103" & "104" that have overlapping portions with the electrolyte "115" in between the overlapping portions where the overlapping portions are connected by an electrically conductive member "135" (See Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Maeda fuel cell to include first and second electrode ends that overlap with the electrolyte in between the overlapping portions where the overlapping portions are connected by an electrically conductive rivet member in order to create a stronger electrical connection between the first and second electrodes.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571) 272-0717. The examiner can normally be reached on M-F, 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TC

A handwritten signature in black ink, appearing to read 'MB', with a long horizontal flourish extending to the right.

MICHAEL BARR
SUPERVISORY PATENT EXAMINER